

Amendments to the Specification:

Please replace the paragraph beginning at page 1, line 1 with the following:

This application claims priority from U.S. Provisional Application Serial No. 60/425,204, filed November 8, 2002, and from International Application PCT/DK03/00763, filed November 7, 2003, each of which is hereby incorporated by reference in its entirety.

Please replace the paragraph beginning at page 4, line 12 with the following (please note that the text on page 4, line 21 "tAPPAHGVtSAPDTRPAPGstAPP" has not been added by way of this amendment. This text was underlined in the specification as filed and it should be underlined in the unmarked version of this paragraph) :

One example of this is the glycosylation of the cancer-associated mucin MUC1. MUC1 contains a tandem repeat O-glycosylated region of 20 residues (HGVtSAPDTRPAPGstAPPA) (SEQ ID NO: 1) with five potential O-glycosylation sites. GalNAc-T1, -T2, and -T3 can initiate glycosylation of the MUC1 tandem repeat and incorporate at only three sites (HGVtSAPDTRPAPGstAPPA, GalNAc attachment sites in lower-case). GalNAc-T4 is unique in that it is the only GalNAc-transferase isoform identified so far that can complete the O-glycan attachment to all five acceptor sites in the 20 amino acid tandem repeat sequence of the breast cancer associated mucin, MUC1. GalNAc-T4 transfers GalNAc to at least two sites not used by other GalNAc-transferase isoforms on the GalNAc₄TAP24 glycopeptide (tAPPAHGVtSAPDTRPAPGstAPP, (SEQ ID NO: 2) GalNAc attachment sites in lower case)¹⁰. An activity such as that exhibited by GalNAc-T4 appears to be required for production of the glycoform of MUC1 expressed by cancer cells where all potential

sites are glycosylated ¹². Normal MUC1 from lactating mammary glands has approximately 2.6 O-glycans per repeat ¹³ and MUC1 derived from the cancer cell line T47D has 4.8 O-glycans per repeat ¹². The cancer-associated form of MUC1 is therefore associated with higher density of O-glycan occupancy and this is accomplished by a GalNAc-transferase activity identical to or similar to that of GalNAc-T4.

Please replace the paragraph beginning at page 11, line 21 with the following:

Figure 2 is a multiple sequence alignment (ClustalW) of putative lectin domains derived from 16 human polypeptide GalNAc-transferases. Petitions Positions of conserved motifs CLD and QxW in the α, β, and γ repeats are indicated. The numbering indicated in the margins reflects numbering of the analysed sequence region of each GalNAc-transferase. Conserved residues are indicated by black ~~box'ing~~ boxing. (SEQ ID NO: 3-18)

Please replace the paragraph beginning at page 28, line 28 with the following:

Expression to produce functional lectin domains of polypeptide GalNAc-transferases without the catalytic unit (or activity) can be carried out in any number of conventional expression systems familiar to those skilled in the art. In one embodiment, GalNAc-transferase lectins are expressed in a secreted soluble form, which can be recovered from the culture medium. Such secreted soluble forms lack the N-terminal cytoplasmic tail, transmembrane retention sequence, stem region and the catalytic unit. The boundaries of the catalytic units and lectin domains are defined by multiple sequence alignments and experimentation of lectin binding activity (multiple sequence alignment analysis of the C-terminal sequences polypeptide GalNAc-transferases including the most C-terminal boundaries of the catalytic domains and the entire lectin domains shown in Figure 2). The boundaries cannot be clearly defined but the most C-terminal well-conserved sequence motif of the catalytic units (WYLENVYP) (SEQ ID NO: 19) can be excluded from the lectin domains. Parts of or the entire catalytic domains may be included to produce

functional lectin domains, and inclusion of inactivating mutations in the catalytic units (e.g. mutations in the DxH motif important for donor substrate binding, or residues important for acceptor substrate binding⁴) may be used to avoid additional binding activity mediated through the catalytic units. In another embodiment, host cells (e.g. CHO cells) are engineered to express full coding polypeptide GalNAc-transferases with or without mutations in their catalytic units and binding mediated through lectin domains are detremied in vivo in host cells.

Please replace the paragraph beginning at page 48, line 21 with the following:

Polypeptide GalNAc-transferases are highly conserved throughout evolution. Orthologous relationships can be defined from man to Drosophila,⁴⁸ and ortholgous members of all human polypetide GalNAc-transferase isoforms are clearly identifiable in mouse and rats, and likely all mammals.

Please replace the paragraph beginning at page 48, line 25 with the following:

Polypeptide GalNAc-transferases are predicted to be type II transmembrane Golgi-resident proteins with a domain structure depicted in Figure 1.² The N-terminal cytoplasmic tail, the hydrophic transmembrane signal sequence, and the stem region may be involved in directing Golgi-localization⁴⁷. The catalytic unit of the enzymes is approximately 300-350 amino acid residues and highly conserved in primary sequence among isoforms and also throughout evolution of the gene family^{3,48}. The C-terminal region of approximately 130 amino acids exhibits similarity with the galactose binding lectin, ricin. This region show little sequence similarity among isoforms and is poorly conserved in evolution³.

Please replace the Table beginning at page 50, with the following:

TABLE I. Primers used for PCR of soluble secreted GalNAc-transferase expression constructs.

GalNAc-T1:

EBHC121H: 5'-GCGGGATCCAGGACTTCCTGCTGGAGATG-3' (SEQ ID NO: 20)

EBHC107B: 5'-GCGGATCCTCAGAATATTCTGGAAGGG-3' (SEQ ID NO: 21)

GalNAc-T2:

EBHC75D: 5'-GCGGAATTCTTAAAAAGAAAGACCTCATCACAGC-3' (SEQ ID NO: 22)
EBHC68: 5'-GCGGAATTCCTACTGCTGCAGGTTGAGC-3' (SEQ ID NO: 23)

GalNAc-T3:

EBHC219H: 5'-GCGGGATCCAACGATGGAAAGGAACATG-3' (SEQ ID NO: 24)
EBHC215: 5'-AGCGGATCCAGGAACACTTAATCATTGGC-3' (SEQ ID NO: 25)

GalNAc-T4:

EBHC318: 5'-GCGGGATCCTTTCATGCCTCCGCAGGAGCC-3' (SEQ ID NO: 26)
EBHC307: 5'-GCGGGATCCGACGAAAGTGCTGTTGCTC-3' (SEQ ID NO: 27)

GalNAc-T5:

EBHC909: 5'-GCGGGATCCTGCTTAACTGGAGGGCTAGAGC-3' (SEQ ID NO: 28)
EBHC907: 5'-GCGGGATCCATCAGTTACACTTCAGGCTTC-3' (SEQ ID NO: 29)

GalNAc-T6:

EBHC514H: 5'-GCGGGATCCCCTGGACCTCATGCTGGAGGCCATG-3' (SEQ ID NO: 30)
EBHC511N: 5'-AGCGGATCCTGGGGATGATCTGGTCCTAGAC-3' (SEQ ID NO: 31)

GalNAc-T7:

EBHC1122H: 5'-GCGAAGCTTCAGGATGAGGGAAGACAGAGATG-3' (SEQ ID NO: 32)
EBHC1116H: 5'-GCGAAGCTCTCTAAACACTATGGATCTTATTTC-3' (SEQ ID NO: 33)

GalNAc-T8:

EBHC1820: 5'-GCGGGATCCTCTGAAAGAAAGTATGAAATTAGC-3' (SEQ ID NO: 34)
EBHC1821: 5'-GCGGGATCCTCACTGGCTGTTGGTCTGACC-3' (SEQ ID NO: 35)

GalNAc-T9:

EBHC1320: 5'-GCGGGATCCCTGCCGCCTGCAGGGCCGCTCCAG-3' (SEQ ID NO: 36)
EBHC1321: 5'-GCGGGATCCTCAGTGCCGTCGGTGTGATCC-3' (SEQ ID NO: 37)

GalNAc-T10:

EBHC2520: 5'-GCGGGATCCCCGCGAGCGGCAGCCGACGGC-3' (SEQ ID NO: 38)
EBHC2521: 5'-GCGGGATCCTCAGTTCTATTGAATTTC-3' (SEQ ID NO: 39)

GalNAc-T11:

EBHC629: 5'-GCGAATCGTGAAGTGACTCAGCCACTTAAG-3' (SEQ ID NO: 40)
EBHC614: 5'-GCGAATCGTCTGTCAGACACGTGTC-3' (SEQ ID NO: 41)

GalNAc-T12:

EBHC1051: 5'-GCGGGATCCGGCTCGGTGCTGCAGGGCGCAGCG-3' (SEQ ID NO: 42)
EBHC1032: 5'-GCGGGATCCTCATAACATGCGCTTTGAAGAACCC-3' (SEQ ID NO: 43)

GalNAc-T13:

EBHC2000: 5'-GCGGGATCCGATGTTGCACVVTCCCCACCAACACC-3' (SEQ ID NO: 44)

EBHC2002: 5'-GCGGGATCCTCATCGTCATCCACAGCATTG-3' (SEQ ID NO: 45)

GalNAc-T14:

EBHC1720: 5'-GCGGGATCCTCTGCTGCCTGCATTGAGGGCTG-3' (SEQ ID NO: 46)

EBH21721: 5'-GCGGGATCCTCATGTGCCAAGGTCATGTTCC-3' (SEQ ID NO: 47)

GalNAc-T15:

EBHC412: 5'-GCGGGATCCCAGAGGAAGTTGGAGGTGCCG-3' (SEQ ID NO: 48)

EBHC438: 5'-GCGGGATCCCAGGGGTCTCAAGAGCTCACC-3' (SEQ ID NO: 49)

GalNAc-T16:

EBHC1913: 5'-GCGGGATCCCTACTTATGGCAGGACAACCG-3' (SEQ ID NO: 50)

EBHC1912: 5'-GCGTCATGTGTGGAACAGAGCTGCCACTG-3' (SEQ ID NO: 51)

Please replace the paragraph beginning at page 51, line 1 with the following:

Expression constructs were amplified by PCR using 20 ng plasmid DNA as template. Expand High Fidelity-kit (Roche) was used as recommended by the manufacturer using an ABI2700 thermocycler (Applied Biosystems). Products were digested with *Eco*RI (GalNAc-T2, -T11, -T12 and -T16), *Bam*HI (GalNAc-T1, -T3, -T4, -T5, -T6, -T8, -T9, -T10, -T13, -T14 and -T15) and *Hind*III (GalNAc-T7), and sub-cloned into the *Eco*RI or *Hind*III site of pBKS-HistagI or the *Bam*HI site of pBKS-HistagII. pBKS-Histag-I and –II vectors were generated from pBluescript (Stratagene), by inserting a fragment encoding 6xHis, a thrombin cleavage site, and a T7 antibody site. pBKS-Histag-I was modified with the sequence:

5'-GCGGCCGCTCTAGAACTAGTGGATCCAGCAGCCATCATCATCATCACAGCAGCGGCC
TGGTGCCGCGCGCAGCCATATGGCTAGCATGACTGGTGACAGCAAATGGTCGCGGAATTCCGATATC
AAGCTTATCGATAACCGTCGACCTCGAG-3'. (SEQ ID NO: 52)

Please replace the paragraph beginning at page 51, line 13 with the following:

pBKS-Histag-II was modified with the sequence:

5'-GAATT CGCGGCCG CAGCAGCCATCATCATCATCACAGCAGCGCCCTGGTGCGCGCG
GCAGCCATATGGCTAGCATGACTGGTGACAGCAAATGGATCCACTAGTTCTAGAGCGGCCGC -3'. (SEQ
ID NO: 53)

Please replace the paragraph beginning at page 51, line 24 with the following:

Human GalNAc-T12 DNA sequence:

ATGTGGGGCGCACGGCGGGCGCTGCCGCGGGAACTGCAGGCGGGAGGCCTGGTGGCTC
CTGGCGCTACTGGCGTTGGCCGGCTGGCTCGGTGCTGCCGCGAGCGTGGGCCGGCGGGCTGCC
GAGCCGGGACCCCCGCGCACCCCGCAGGGCGGCGAGCCGGTCATGCCGCGCCGGTGCCGGCG
AACCGCGCTGGCGCGGGCGAGGCAGGTGCGGCTGCAGCTGCAGGGCGAGGAGCTGCAGGAGGAG
AGCGTGCAGGCTGCACCAGATTAACATCTACCTCAGCGACCGCATCTCACTGCACCGCCCTGCCGAGCGC
TCCAACCCGCTGTGCAAAGAGAAGAAATATGATTATGATAATTGCCAGGACATCTGTTATCATAGCATT
TATAATGAAGCCTGGTCAACTCTCCTCGACAGTTACAGTGTCTTGAGACATCCCCGGATATCCTGCTA
GAAGAAGTGATCCTTAGATGACTACAGTGATAGAGAGCACCTGAAGGAGCGCTGGCCAATGAGCTTCG
GGACTGCCAAGGTGCGCCTGATCCGCGCAACAAGAGAGAGGGCCTGGTGCAGGCCGGCTGCTGGGGCG
TCTGCGCGAGGGCGATGTTCTGACCTCCTGGACTGTCACTGTGAATGCCACGAAGGGTGGCTGGAGCG
CTGCTGCAGAGGATCCATGAAGAGGAGTCGGCAGTGGTGTGCCCGGTGATTGATGTGATCGACTGGAACACC
TTCGAATAACCTGGGAACTCCGGGAGCCCCAGATCGCGGTTTGACTGGAGGCTGGTTCACGTGGC
ACAGTTCTGAGAGGGAGAGGATACGGATGCAATCCCCGTCATGTGATCAGGTCTCCAACAATGGCTGGT
GGGCTGTTGCTGTGAGTAAGAAATATTTGAATATCTGGGTCTTATGATACAGGAATGGAAGTTGGG
GGAGAAAACCTCGAATTTCTTAGGATCTGGCAGTGTGGTGGGTTCTGAAACACACCCATGTTCCAT
GTTGCCATGTTCCCAGCAAGCAAGCTCCACTCCGCAACAAGGCTCTGCCAACAGTGTGAGCT
GAAGTATGGATGGATGAATTAAAGAGCTACTACCATCGAACCCCCGTGCCGCTTGAACCTTTGG
GATGTGACAGAGAGGAAGCAGCTCCGGACAAGCTCCAGTGAAAGACTTCAAGTGGTCTTGGAGACTGT
TATCCAGAACTGCATGTGCCTGAGGACAGGCCTGGCTTCTCGGGATGCTCCAGAACAAAGGACTAACAGAC
TACTGCTTGACTATAACCCCTCCGATGAAAACAGATTGTGGGACACCAGGTATTCTGTACCTCTGTCAT
GGGATGGGCCAGAACATCAGTTTCGAGTACACGTCCAGAAAGAAATACGCTATAACACCCACCAGCCTGAG
GGCTGCATTGCTGTGGAAGCAGGAATGGATACCCTTATCATGCATCTCGCAAGAAACTGCCAGAGAAT
CAGAAGTTCATCTGCAGGAGGATGGATCTTATTCACGAACAGTCCAAGAAATGTGTCCAGGCTGCGAGG
AAGGAGTCGAGTGACAGTTCTCCACTCTACGAGACTGCACCAACTCGGATCATCAGAAATGGTTCTTC
AAAGAGCGCATGTTATGA **(SEQ ID NO: 54)**

Please replace the paragraph beginning at page 52, line 19 with the following:

Human GalNAc-T12 amino acid sequence:

MWGRTRRRCPRELRRGREALLVLLALLALAGLGSVLRAQRGAGAGAAEPGPPRTPRPGRREPVM
RPPVPANALGARGEAVRLQLQGEELRLQEEESVRLHQINIYLSDRISLHRRRLPERWNPLCKEKKYDYDNLPRT
SVIIAFYNEAWSTLLRTVYSVLETSPDILLEEVILVDDYSDREHLKERLANELGLPKVRLIRANKKGLVR
ARLLGASAARGDVLTFLDCHEGWLEPLLQRIHEEESAVVCPVIDVIDWNTFEYLGNSGEPQIGGFDWR
LVFTWHTVPERERIRMSPVDVIRSPTMAGGLFAVSKYFEYLGSYDTGMEVWGGENLEFSFRIWQCGGVLE

THPCSHVGHFSPSKLPTPRNKALANSVRAAEVWMDEFKELYHRNPRARLEPFGDVTERKQLRDKLQCKDFK
WFLETVYPELHVPEDRPGFFGMLQNKG LTDYCFDYNPPDENQIVGHQVILYLCHGMQNQFFEYTSQEIRY
NTHQPEGCIAVEAGMDTLIMHLCEETAPENQKFILQEDGSLFHEQSKKCVQAARKESSDSFVPLLRDCTNSD
HQKWFFKERML **(SEQ ID NO: 55)**

Please replace the paragraph beginning at page 52, line 31 with the following:

Human GalNAc-T13 DNA sequence:

ATGCTCTAAGGAAGCGATAACAGGCACAGACCATGCAGACTCCAGTTCCCTCTGCTGCTCCTGATG
CTGGGATGCGCCTGATGATGGTGGCGATGTTGCACCCCTCCCCACCACACCCTGCACCAGACTGTCACAGCC
CAAGCCAGCAAGCACAGCCCTGAAGCCAGGTACCGCCTGGACTTGGGAATCCCAGGATTGGGTACTGGAA
GCTGAGGATGAGGGTGAAGAGTACAGCCCTCTGGAGGGCTGCCACCCCTTATCTCACTGCGGGAGGATCAG
CTGCTGGTGGCCGTGGCCTTACCCCAGGCCAGAAGGAACCAGGCCAGGGCAGGAGAGGTGGGAGCTACCGC
CTCATCAAGCAGCCAAGGAGGCAGGATAAGGAAGCCCCAAAGAGGGACTGGGGCTGATGAGGACGGGAG
GTGTCTGAAGAACAGAGGAGTTGACCCCGTTCAGCCTGGACCCACGTGGCCTCCAGGAGGCACTCAGTGCCGC
ATCCCCCTCCAGAGGGCTCTGCCGAGGTGCGGCACCCACTGTGTCTGCAGCAGCACCCCTCAGGACAGCCTG
CCCACAGCCAGCGTCATCCTCTGTTCCATGATGAGGCCTGGTCCACTCTCCTGCGGACTGTACACAGCATC
CTCGACACAGTGCCCAGGGCCTCCTGAAGGAGATCATCCTCGGACACCTCAGCCAGCAAGGACAACTC
AAAGTCTGCTCTCAGCGAATATGTGCCAGGCTGGAGGGGTGAAGTTACTCAGGAGCAACAAGAGGCTGGGT
GCCATCAGGGCCCGGATGCTGGGGCCACCAGAGCCACCGGGATGTGCTCGTCTCATGGATGCCACTGC
GAGTGCCACCCAGGCTGGCTGGAGGCCCTCCTCAGCAGAATAGCTGGTACAGGAGCCAGTGGTATCTCCG
GTGATAGATGTGATTGACTGGAAGACTTCCAGTATTACCCCTCAAAGGACCTGCAGCGTGGGTGTTGGAC
TGGAAAGCTGGATTCCACTGGAACCTTGCCAGACATGTGAGGAAGGCCCTCAGCCCCATAAGCCCC
ATCAGGAGCCCTGTGGTGCCGGAGAGGTGGTGGCCATGGACAGACATTACTTCAAAACACTGGAGCGTAT
GAUTCTCTTATGTCGCTGCGAGGTGGTAAAACCTCGAACTGTCTTCAAGGCCTGGCTGTGGTGGCT
GTTGAAATCCTCCCTGCTCTGGTAGGACACATCTACAAAATCAGGATTCCATTCCCCCTCGACCAG
GAGGCCACCCCTGAGGAACAGGGTCGATTGCTGAGACCTGGCTGGGTATTCAAAGAACCTCTACAAG
CATAGCCCAGAGGCCCTCTCCTGAGCAAGGCTGAGAAGCCAGACTGCATGGAACGCTTGCAGCTGCAAAGG
AGACTGGGTGCGACATTCACTGGTTCTGGCTATGCTACCCCTGAGCTGTACCCATCTGAACCCAGG
CCCAGTTCTCTGGAAAGCTCCACAACACTGGACTTGGCTCTGTGCAGACTGCCAGGCAGAAGGGACATC
CTGGCTGCCCATTGGTGGCTCTTGCACTGACAGCCGGCAGCAACAGTACCTGCAGCACACCAGCAGG
AAGGAGATTCACTTGGCAGCCCACAGCACCTGTGCTTGCTGTGAGGCAGGAGCAGGTGATTCTCAGAAC
TGCACGGAGGAAGGCTGGCCATCCACCCAGCAGCACTGGACTTCCAGGAGAATGGGATGATTGTCCACATT
CTTCTGGAAATGCATGGAAGCTGTGGTCAAGAAAACAATAAGATTGTACCTGCGTCCGTGTGATGGA
AAAGCCGCCAGCAGTGGCTTGTGGATGACAGATCAATGCTGTGGATGAAACGATGA **(SEQ ID NO: 56)**

Please replace the paragraph beginning at page 53, line 24 with the following:

Human GalNAc-T13 amino acid sequence:

MLLRKRYRHRPCRLQFLLLLMLGCVLMVAMLHPPHHTLHQTVTAQASKHSPEARYRLDFGESQDWLE
AEDEGEYEYSPLEGLPPFISLREDQLLVAVALPQARRNQSQRGGSYRLIKQPRRQDKEAPKRDWGADED
GEVSEEEELTPFSLDPRGLQEALSARIPLQRALPEVRHPLCLQQHPQDSLPTASVILCFHDEAWSTLLRT
VHSILDVTPRAFLKEIILVDDLSQQGQLKSALSEYVARLEGVKLLRSNKRLGAIRARMLGATRATGDVLV
FMDAHCECHPGWLEPLLSRIAGDRSRVSPVIDVIDWKTQYYPSKDLQRGVLDWKDFHWEPLPEHVRK
ALQSPISPIRSPVVPGEVVAMDRHYFQNTGAYDSLMSLRGGENLELSFKAWLCGGSVEILPCSRVGHIYQ
NQDSHSPLDQEATLRNRVRIAETWLGSFKETFYKHSPEAFSLSKAEPDCMERLQLQRRILGCRTFHWFLA
NVYPELYSEPRPSFSGKLHNTGLGLCADCQAEGDILGCPMVLAPCSDSRQQYLQHTSRKEIHFGSPQH
LCFAVRQEQQVILQNCTEGLAIHQHQHWDQENGIVHILSGKCMEEAVVQENNNDLYLRPCDGKARQQWRF
DQINAVDER **(SEQ ID NO: 57)**

Please replace the paragraph beginning at page 54, line 1 with the following:

Human GalNAc-T14 DNA sequence:

ATGAGGAGATTGTACTGCAAGGTGGTTCTAGCCACTTCGCTGATGTGGGTTCTTGTGATGTC
TTCTTACTGCTGTACTTCAGTGAATGTAACAAATGTGATGACAAGAAGGAGAGATCTCTGCTGCCTGCATTG
AGGGCTGTTATTCAAGAAACCAAGAAGGGCCAGGAGAAATGGGAAAGCTGTGTTGATTCTAAAGATGAC
CAGGAGAAAATGAAAGAGCTGTTAAAATCAATCAGTTAACCTTATGCCAGTGATTGATTGCCCTTAAT
AGAAAGTCTGCCAGATGTAAGATTAGAAGGATGTAAGACAAAAGTCTACCCCTGATGAACTTCAAACACAAGT
GTAGTCATTGTGTTCTAAATGAAGCTGGAGCACTCTCCTAGAACTGTTACAGTGTGATAAATCGTTCC
CCACACTATCTACTCTCAGAGGTCATCTGGTAGATGATGCCAGTGAAAGAGATTTCTCAAGTTGACATTA
GAGAATTACGTAAAAATTAGAAGTGCCAGTAAAATTATTAGGATGGAAGAACGCTCTGGGTTAACAGT
GCCCGTCTCGAGGAGCAGCTGCTCAAAAGGGCAGGTATAACTTTCTTGATGCACACTGTGAATGCACG
TTAGGATGGCTGGAGCCTTGCTGGCAAGAATAAGGAAGACAGGAAAACGGTTCTGCCCTATCATTGAT
GTGATTAGTGTGATGATACTTTGAATATATGGCTGGTCAGACATGACTTATGGGGTTAACGGAAACTG
AATTTCGCTGGTATCCTGTTCCCAAAGAGAAATGGACAGGGAGAACAGAACATTACCTGTCAGG
ACCCCTACTATGGCTGGTGGCCTATTCTATTGACAGAAACTACTTGAAGAGATAGGAACATTACGATGCA
GGAATGGATATCTGGGTGGAGAGAATCTGAAATGTCTTTAGGATTGGCAATGTGGAGGCTCCTGGAG
ATTGTTACTGCTCCATGTTGGCATGTTTCTGGCAAGGCAACTCCACACTTTCTGGTGGCACTGGT
CATGTCATCAACAAGAACACAGGAGACTGGCAGAAGTTGGATGGATGAATTAAAGATTCTTACATC
ATATCCCCAGGTGTTGTCAAAGTGGATTATGGAGATGTGTCAGTCAGAAAAACACTAACAGAGAAAATCTGAAG
TGTAAAGCCCTTTCTGGTACCTAGAAAACATCTATCCGGACTCCAGATCCAAGACGTTATTACTCACTT
GGTAGAGATAAGAAATGTTGAAACCAATCAGTGTGTTAGACAACATGGGCCAGGAAAATGAAAAGTGGGT
ATATTCAACTGTGATGGTATGGGAGGAAATCAGGTATTCTTACACTGCTGACAAGAAAATCCGAACCGAT
GACTTGTGCTGGATGTTCTAGACTCAATGGACCTGTAATCATGTTAAAATGCCACCATATGAGAGGAAAT
CAGTTATGGAATATGATGCTGAGAGACTCACGTTGCGACATGTTAACAGTAACCAATGTCTCGATGAACCT

TCTGAAGAACAAATGGTGCCTACAATGCAGGACTGTAGTGGAAAGCAGATCCAACAGTGGCTGCTAAGG
AACATGACCTTGGGCACATGA (SEQ ID NO: 58)

Please replace the paragraph beginning at page 54, line 25 with the following:

Human GalNAc-T14 amino acid sequence:

MRRFVYCKVVLATSLMWVLVDVFLLLYFSECNKCDDKKERSLLPALRAVISRNQEGPGEMGKAVLI
PKDDQEKMKEFLKINQFNLMASDLIALNRSLPDVRLEGCKTKVYPDELPTSVVIVFHNEAWSTLLRTVYSV
INRSPHYLLSEVILVDDASERDFLKLTLENYVKNLEPVVKIIRMEERSGLIRARLRGAAASKGQVITFLDAH
CECTLGWLEPLLARIKEDRKTVVCPIIDVISDDTFEYMAISDMTYGGFNWKLNFRWYPVPQREMDRRKGDRT
LPVRTPTMAGGLFSIDRNYFEEIGTYDAGMDIWGGENLEMSFRIWQCGGSLEIVTC SHVGHVFRKATPYTFP
GGTGHVINKNNRRLAEVWMDEFKDFFYIISPGVVKVDYGDVSVRKTLRENLKCKPFSWYLENIYPDSQIPRR
YYSLGEIRNVETNQCLDNMGRKENEKVGIFNCHGMGGNQVFSYTADKEIRTDDLCLDVSRNLNGPVIMLKCHH
MRGNQLWEYDAERLTLRVNSNQCLDEPSEEDKMVPTMQDCSGRSQQWLLRNMTLGT (SEQ ID NO:
59)

Please replace the paragraph beginning at page 55, line 1 with the following:

Human GalNAc-T15 DNA sequence:

ATGCGGCGCCTGACTCGTCGGCTGGTTCTGCCAGTCAGCTTCGGGGTGCTCTGGATCACGGTGCTGCTGTTCT
TCTGGTAACCAAGAGGAAGTGGAGGTGCCGACGGGACCTGAAGTGCAGACCCCTAACGCCTCGGACGC
TGACTGGACGACCTGTGGGACCAGTTGATGAGCGGCGGTATCTGAATGCCAAAAGTGGCGCGTTGGT
GACGACCCCTATAAGCTGTATGCTTCAACCAGCGGGAGAGTGAGCGGATCTCAGCAATCGGCCATCC
CGGACACTGCCATCTGAGATGCACACTGCTGGGTATTGCACGGACCTCCACCCACTAGCATCATCAT
CACCTTCCACAACGAAGCCGCTCCACGCTGCTCAGGACCATCCGAGTGTATTAAACCGCACCCCTACG
CATCTGATCCGGAAATCATATTAGTGGATGACTTCAGCAATGACCTGATGACTGTAAACAGCTCATCA
AATTGCCAAGGTGAAATGCTGCGAATAATGAACGGCAAGGTCTGGTCCGGTCCGGATTGGGGCGC
TGACATGCCAGGGCACCCTGACTTTCTGACAGCCACTGTGAGGTGAAACAGGGACTGGCTCCAG
CCTCTGTTGCACAGGGTCAAAGAAGACTACACGGGGTGGTGTGCCCTGTGATCGATATCATTAACCTGG
ACACCTCACCTACATCGAGTCTGCCTCGGAGCTCAGAGGGGGTTGACTGGAGCCTCCACTCCAGTG
GGAGCAGCTCTCCCCAGAGCAGAACAGCTGGCGCCTGGACCCACGGAAGCCCACAGGACTCCTATCATA
GCTGGAGGGCTTCCTGATCGACAAAGCTTGGTTGATTACCTGGGAAATATGATATGGACATGGACA
TCTGGGGTGGGAGAACCTTGAAATCTCCTCCAGTGATGTGGATGTGGGGGGCAGCCTAGAGATCGTCCC
CTGCAGCCAGTGGGCACGTCTCCGGAAAGAAGCACCCCTACGTTCCCTGATGGAAATGCCAACACG
TATATAAAGAACACCAAGCGGACAGCTGAAGTGTGGATGGATGAATACAAGCAATACTATTACGCTGCC
GGCCATTGCCCTGGAGAGGCCCTCGGAATGTTGAGAGCAGATTGGACCTGAGGAAGAATCTGCGCTG
CCAGAGCTCAAGTGGTACCTGGAGAATATCTACCCCTGAACTCAGCATCCCCAAGGAGTCCTCCATCCAG

AAGGGCAATATCCGACAGAGACAGAAGTGCCTGGAATCTCAAAGGCAGAACACCAGAAACCCAAACC
TAAAGTTGAGCCCCTGTGCCAAGGTCAAAGGCGAAGATGCAAAGTCCCAGGTATGGCCTTCACATACAC
CCAGCAGATCCTCCAGGAGGCTGTGCCTGTCAGTCATCACCTGTTCCCTGGCGCCCCAGTGGTTCTT
GTCCTTGCAAGAATGGAGATGACCGACAGCAATGGACCAAAACTGGTTCCCACATCGAGCACATAGCAT
CCCACCTCTGCCTCGATAACAGATATGTTGGTGTGGCACCAGAACGGCAAGGAAATCGTCGTCAACCC
ATGTGAGTCCTCACTCATGAGCCAGCACTGGACATGGTGAGCTTGGAGGACCCCTGCCAGAAGCAGCA
AGGGCCATGGGTGGTGTGCTTCCCTGGACCAGAACAGACTGGAAACTGGCAGCAAGCAGCCTGCAACCC
CTCAGACATCCTGGACTGGAGGTGGAGGCAGAGCCCCCAGGACAGGAGCAACTGTCTCAGGGAGGACA
GAGGAAAACATCACAAGCCAATGGGCTCAAAGACAAATCCCACATGTTCTCAAGGCCGTTAAGTTCCAG
TCCTGGCCAGTCATTCCCTGA **(SEQ ID NO: 60)**

Please replace the paragraph beginning at page 55, line 29 with the following:

Human GalNAc-T15 amino acid sequence:

MRRRLTRRLVLPVFGVLWITVLLFFWVTKRKLEVPTGPEVQTPKPSADWDDLWDQFDERRYLNAKK
WRVGDDPYKLYAFNQRESERISSNRAIPDTRHLRCTLVYCTDLPPSIIITFHNEARSTLLRTIRSVLNRT
PTHLLIREIIILVDDFSNDPDDCKQLIKLPVKCLRNNEQGLVRSRIRGADIAQGTTLTFLDSHCEVNRDWLQ
PLLHRVKEDYTRVVCPVIDIINLDTFTYIESASELRGGFDSLHFQWEQLSPEQKLGAWTPRKPIRTPIIAG
GLFVIDKAWFYLGKYDMDMDIWGGENFEISFRVWMCIGGSLEIVPCSRVGHVFRKKHPYVFPGDNANTYIKN
TKRTAEVWMDEYKQYYAARPFALERPFGNVESRLDLRKNLRCQSFKWYLENIYPELSIPKESSIQKGNIRQ
RQKCLEQRQNNQETPNLKLSPCAVKGEDAKSQVWAFTYTQQILQEELCLSVITLFPGAPVVLVLCKNGDD
RQQWTKTGSHIEHIASHLCLTDMDFGDGTENGKEIVVNPCESSLMSQHDMVSS **(SEQ ID NO: 61)**

Please replace the paragraph beginning at page 56, line 5 with the following:

Human GalNAc-T16 DNA sequence:

ATGAGGAAGATCCGCGCCAATGCCATGCCATCCTGACCGTAGCCTGGATCCTGGCACTTCTAC
TACTTATGGCAGGACAACCGAGGCCACGCAGCATCCTCCGGCGGCCGGGGCGCGCAGAGGGCAGGCAGGAGG
TCGGAGCAGCTCCCGAGGACCGCACCATCCGCTCATTGTGACAGGAACCTCCCTGAAAGGTTGATGAG
AAGGCCTACCTGTCGCCAAGCAGCTGAAGGCTGGAGAGGACCCCTACAGACAGCACGCCTAACCAAGCTG
GAGAGTGACAAGCTGAGCCCAGACCGGCCATCCGGACACCCGCCATTACAGCTGCCATCTGTGTCCTAC
TCCTCGGACCTGCCAGCCACCAGCGTCATCATCACCTCCACAATGAGGCCGTTCCACCCCTGCTGCGCACA
GTGAAGAGTGTCTGAACCGAACTCCTGCCAACTTGATCCAGGAGATCATTAGTGGATGACTTCAGCTCA
GATCCGGAAGACTGTCTACTCCTGACCAAGGATCCCCAAGGTCAAGTGCCTGCGCAATGATCGCGGGAAAGGG
CTGATCCGGTCCCGAGTGCCTGGGGCGGACGTGGCTGCAGCTACCGTTCTCACCTTCTGGATGCCACTGC
GAAGTGAACACCGAGTGGCTGCCGCCATGCTGCAGCGGGTAAGGAGGACCACACCCCGTGGTGAAGTCCC
ATCATTGATGTCATCAGTCTGGATAATTTCGCTACCTGCAGCATCTGCTGACCTCGTGGAGGGTTCGAC

TGGAGCCTGCATTCAAGTGGGAGCAGATCCCTTTGAGCAGAAGATGACCCGGACAGACCCCACCAGGCC
ATAAGGACGCCTGTCATAGCTGGAGGAATCTCGTGTACGACAAGTCCTGGTTAACCACTGGAAAGTAT
GATGCCAGATGGACATCTGGGGGGAGAGAATTTGAGCTCCTTCAGGGTGTGGATGTGGTGGCAGT
CTGGAGATCGTCCCCGTCAGCCGGTGGCCATGTCTTCAGGAAACGGCACCCCTACAACTTCCCTGAGGGT
AATGCCCTCACCTACATCAGGAATACTAAGCGACTGCAGAAGTGTGGATGGATGAATACAAGCAATACTAC
TATGAGGCCCGGCCCTCGGCCATCGGAAGGCCTCGGCAGTGTGGTACGCGGATAGAGCAGAGGAAGAAG
ATGAACGTCAAGTCCTCCGCTGGTACCTGGAGAACGTCTACCCAGAGCTCACGGTCCCCGTGAAGGAAGCA
CTCCCCGGCATCATTAAGCAGGGGTGAAGTGCCTAGAATCTCAGGGCCAGAACACAGCTGGTACTTCCTG
CTTGGAAATGGGATCTGCAGAGGGTCTGCCAAGAACCGCAGCCGCCAGGCATGGCTGTTCACTGACCAC
CTCATCCAGCAGCAGGGGAAGTGCCTGGCTGCCACCTCCACCTTAATGTCCTCCCTGGATCCCCAGTCATA
CTGCAGATGTGCAACCCTAGAGAAGGCAAGCAGAAATGGAGGAGAAAAGGATCTTCATCCAGCATTCACTG
AGTGGCCTCTGCCTGGAGACAAAGCCTGCCAGCTGGTGACCAGCAAGTGTCAAGGCTGACGCCAGGCCAG
CAGTGGCAGCTGTTGCCACACACATGA **(SEQ ID NO: 62)**

Please replace the paragraph beginning at page 56, line 30 with the following:

Human GalNAc-T16 amino acid sequence:

MRKIRANAIAILTVAWILGTFYYLWQDNRAHAASSGGRGAQRAGRREQLREDRTIPLIVTGTPSK
GFDEKAYLSAKQLKAGEDPYRQHAFNQLESQDKLSPDRPIRDTRHYSCPSVSYSSDLPATSVIITFHNEARST
LLRTVKSVLNRTPANLIQEIIILVDDFSSDPEDCLLTRIPVKCLRNDRREGLIRSRRVGADVAATVLTFL
DSHCEVNTEWLPPMLQRVKEDHTRVVSPIIDVISLDNFAYLAASADLRGGFDWSLHFKEQIPLEQKMRTD
PTRPIRTPVIAGGIFVIDKSWFNHLKYDAQMDIWGGENFELSFRVWMCGGSLEIVPCSRVGHVFRKRHPYN
FPEGNALTYIRNTKRTAEVWMDEYKQYYEARPSAIGKAFGSVATRIEQRKKMNCKSFRWYLENVYPELTVP
VKEALPGIIKQGVNCLESQGQNTAGDFLLGMGICRGSAKNPQPAQAWLFSDHLIQQQGKCLAATSTLMSSPG
SPVILQMCNPREGKQKWRRKGSIQHSVGLCLETKPAQLVTSKCQADAQAQQWQLLPHT **(SEQ ID NO: 63)**

Please replace the Table beginning at page 58, with the following:

Table II. Primers used for amplification of GalNAc-transferase lectin domains

GalNAc-T1 lectin domain:

T1LECFOR: 5'-CAAAGGAAGCTTATGGAGATATATCGTCAAGAG-3' **(SEQ ID NO: 64)**

T1LECREV: 5'-GCAAGCTCGAGGCAGGCCGCTCAGAATATTCTGGAAAGGGTGAC-3' **(SEQ ID NO: 65)**

GalNAc-T2 lectin domain:

T2LECFOR: 5'-CAAGGAAGCTTCTATGGAAATATTCAAGAGCAGATTG-3' **(SEQ ID NO: 66)**

T2LECREV: 5'-GCAAGCTCGAGGCAGGCCGCTACTGCTGCAGGTTGAGC-3' **(SEQ ID NO: 67)**

GalNAc-T3 lectin domain:

T3LECFOR: 5'-CAAGGAAGCTTCATTGGTATCTTCAAAAAGATT-3' ([SEQ ID NO: 68](#))
T3LECREV: 5'-GCAAGCTCGAGGCAGGCCAGGAACACTTAATCATTGG-3' ([SEQ ID NO: 69](#))

GalNAc-T4 lectin domain:

T4LECFOR: 5'-AGAAAAGAACGTTATGGTATATTCTG-3' ([SEQ ID NO: 70](#))
EBHC307: 5'-AGCGGATCCGACGAAGTGCTGTTGTGCT -3' ([SEQ ID NO: 71](#))

GalNAc-T5 lectin domain:

T5LECFOR: 5'-CAAGGAAGCTTAGATGTTGGCACACCTACCCAGC-3' ([SEQ ID NO: 72](#))
T5LECREV: 5'-GCAAGCTCGAGGCAGGCCAGCATCAGTTACACTTCAGGCTTC-3' ([SEQ ID NO: 73](#))

GalNAc-T6 lectin domain:

T6LECFOR: 5'-CAAGGAAGCTTCCTCGGTGACATTGGAACG-3' ([SEQ ID NO: 74](#))
T6LECREV: 5'-GCAAGCTCGAGGCAGGCCGCTGGGTCTAGACAAAGAGCC-3' ([SEQ ID NO: 75](#))

GalNAc-T7 lectin domain:

T7LECFOR: 5'-AGAAAAGAACGTTATGGGATATATCGGAGCTG-3' ([SEQ ID NO: 76](#))
T7LECREV: 5'-GCAAGCTCGAGGCAGGCCGCTCTAAACACTATGGATGTTATTC-3' ([SEQ ID NO: 77](#))

GalNAc-T8 lectin domain:

T8LECFOR: 5'-CAAGGAAGCTTTGGAGACGTTCTTCAGAATG-3' ([SEQ ID NO: 78](#))
T8LECREV: 5'-GCAAGCTCGAGGCAGGCCGCTACTGGCTGTTGCTGACCCC-3' ([SEQ ID NO: 79](#))

GalNAc-T9 lectin domain:

T9LECFOR: 5'-CAAGGAAGCTTCGGGACGTGCTGAGAGGCTG-3' ([SEQ ID NO: 80](#))
T9LECREV: 5'-GCAAGCTCGAGGCAGGCCGCTCAGTGCCTGCGTGTGATCC -3' ([SEQ ID NO: 81](#))

GalNAc-T10 lectin domain:

T10LECFOR: 5'-CAAGGAAGCTCCGCTGGGATGTCGCAGTCCAG-3' ([SEQ ID NO: 82](#))
T10LECREV: 5'-GCAAGCTCGAGGCAGGCCGCTCAGTTCTATTGAATTTC-3' ([SEQ ID NO: 83](#))

GalNAc-T11 lectin domain:

T11LECFOR: 5'-CAAGGAAGCTTGCAATATCAGTGAGCGTGTGG-3' ([SEQ ID NO: 84](#))
T11LECREV: 5'-GCAAGCTCGAGGCAGGCCACCTAACCTCAAATGC-3' ([SEQ ID NO: 85](#))

GalNAc-T12 lectin domain:

T12LECFOR: 5'-CAAGGAAGCTTGGATGTGACAGAGAGGAAG-3' ([SEQ ID NO: 86](#))
T12LECREV: 5'-GCAAGCTCGAGGCAGGCCGCTATAACATGCCTTTGAAGAACCC-3' ([SEQ ID NO: 87](#))

GalNAc-T13 lectin domain:

T13LECFOR: 5'-CAAGGAAGCTCTGAGAACGCCAGACTGCATGG-3' ([SEQ ID NO: 88](#))
T13LECREV: 5'-GCAAGCTCGAGGCAGGCCGCTCATCGTCATCCACAGCATTG-3' ([SEQ ID NO: 89](#))

GalNAc-T14 lectin domain:

T14LECFOR: 5'-CAAGGAAGCTTGGAGATGTGTCAGTCAGAAAAAC-3' ([SEQ ID NO: 90](#))
T14LECREV: 5'-GCAAGCTCGAGGCAGGCCGCTATGTGCCAAGGTCATGTTCC-3' ([SEQ ID NO: 91](#))

GalNAc-T15 lectin domain:

T15LECFOR: 5'-CAAGGAAGCTTCGGGAATGTTGAGAGCAGATTG-3' ([SEQ ID NO: 92](#))
T15LECREV: 5'-GCAAGCTCGAGGCAGGCCGCTAAGAACTCACCATGCCCCAGTG-3' ([SEQ ID NO: 93](#))

GalNAc-T16 lectin domain:

T16LECFOR: 5'-CAAGGAAGCTTGCAGTGTGGCTACGCGGATAGAGCAGAGG-3' (SEQ ID NO: 94)
T16LECREV: 5'-GCAAGCTCGAGGCCGCTCATGTGTGGCAACAGCTGCC-3' (SEQ ID NO: 95)

Please replace the paragraph beginning at page 59, line 18 with the following (please note that the text on page 59, line 24 "TGA-stop" has not been added by way of this amendment. This text was underlined and bolded in the specification as filed and it should be underlined in the unmarked version of this paragraph):

T1 LECTIN DNA sequence

AAAGAAGCTTATGGAGATATCGTCAAGAGTTGGTCTAACAGACACAAACTACAATGCAAACCTTTTCCT
GGTACCTAGAGAATATATATCCGATTCTCAAATCCACGTCACTATTCTCATGGGAGAGATAAGAAA
TGTGGAAACGAATCAGTGTCTAGATAACATGGCTAGAAAAGAGAATGAAAAAGTTGGAATTTTAATTGC
CATGGTATGGGGGTAATCAGGTTCTCTTACTGCCAACAAAGAAATTAGAACAGATGACCTTGCT
TGGATGTTCCAACCTTAATGCCAGTTACAATGCTCAAATGCCACCACCTAAAGGCAACCAACTCTG
GGAGTATGACCCAGTGAAATTAAACCTGCAGCATGTGAACAGTAATCAGTGCCTGGATAAAGCCACAGAA
GAGGATAGCCAGGTGCCAGCATTAGAGACTGCAATGGAAGTCGGTCCCAGCAGTGGCTTCGAAACG
TCACCCTCAGAAATATTTGA-stop (SEQ ID NO: 96)

Please replace the paragraph beginning at page 59, line 29 with the following:

T1 LECTIN Amino acid sequence

YGDISSRVGLRHKLQCKPFSWYLENIYPDSQIPRHYSLGEIRNVETNQCLDNMARKENEKVGIFNCHGM
GGNQVFSYTANKEIRTDDLCVDVKLNGPVTMLKCHHLKGQLWEYDPVKLTQHVNSNQCLDKATEEDS
QVPSIRDCNGRSRSQQWLLRNVTLPEIF* (SEQ ID NO: 97)

Please replace the paragraph beginning at page 60, line 1 with the following (please note that the text on page 60, line 8 "TAG-stop" has not been added by way of this amendment. This text was underlined and bolded in the specification as filed and it should be underlined in the unmarked version of this paragraph):

T2 LECTIN DNA sequence

TATCCAGAGTTAAGGGTTCCAGACCATCAGGATATAGCTTTGGGGCCTTGCAGCAGGAACTAACTGCC
TCGACACTTGGGACACTTGCTGATGGTGTGGAGTTATGAATGTCACAAATGCTGGGGAAACCA
GGAATGGGCCTTGACGAAGGAGAAGTCGGTGAAGCACATGGATTGCTTACTGTGGTGGACCGGGCA

CCGGGCTCTTATAAGCTGCAGGGCTGCCGAGAAAATGACAGCAGACAGAAATGGAACAGATCGAGG
GCAACTCCAAGCTGAGGCACGTGGCAGCAACCTGTGCCTGGACAGTCGCACGCCAAGAGCGGGGCCT
AAGCGTGGAGGTGTGGCCGCCCTTCGCAGCAGTGGAAAGTTCACGCTAACCTGCAGCAG**TAG-stop**
(SEQ ID NO: 98)

Please replace the paragraph beginning at page 60, line 10 with the following:

T2 LECTIN Amino acid sequence

YPELRVPDHQDIAFGALQQGTNCLDTLGHFADGVGVYECHNAGGNQEWA
LTKEKSVKHMDLCLTVVDRA
PGSLIKLQGCRENDSRQKWEQIEGNSKLHVGSNLCLDSRTAKSGGLSVEVCPALSQQWKFTLN
LQQ*
(SEQ ID NO: 99)

Please replace the paragraph beginning at page 60, line 20 with the following (please note that the text on page 60, line 28 "TAA-stop" has not been added by way of this amendment. This text was underlined and bolded in the specification as filed and it should be underlined in the unmarked version of this paragraph):

T3 LECTIN DNA sequence

TCATTGGTGATCTTCAAAAAGATTGAAATAAACACCGTCTCGGTGTAAAAATT
TACATGGTATC
TGAACAAACATTATCCAGAGGTGTATGTGCCAGACCTTAATCCTGTTATCTGGATACAT
TAAAGCGT
TGGTCAGCCTCTATGTCGGATGTTGGAGAAAACAATCAAGGAGGCAAACC
ATTATGTATACATGT
CATGGACTGGGGAAACCACTTTGAATACTCTGCTAACATGAAATT
CGGCACAACATCCAGAAGG
AATTATGTCTTCATGCTGCTCAAGGTCTCGTTAGCTGAAGGCATGTACCT
ACAAGGTACAAGACAGT
TGTCACTGGAGAGCAGATATGGGAGATCCAGAAGGATCAACTCTATACA
ATCATTCTAAAAATGTGC
CTTCAGCAAATGGAGAGCATCCAAGTTAGTGTATGCAACCC
ATCAGATCCACTCCAAAATGGATAC
TTAGCCAAATGATTAA-stop
(SEQ ID NO: 100)

Please replace the paragraph beginning at page 60, line 30 with the following:

T3 LECTIN Amino acid sequence

FGDLSKRFEIKHRLRCKNFTWYLNNIYPEVYVPDLNPVISGYIKS
VGQPLCLDVGENNQGGKPLIMYTCH
GLGGNQYFEYSAQHEIRHN
IQKELCLHAAQGLVQLKACTYKGHKTVVTGEQIWEI
QKDQLLYNPFLKMCL
SAN
GEHPSLVSCNPSDPLQKWILSQND*
(SEQ ID NO: 101)

Please replace the paragraph beginning at page 60, line 40 with the following (please note that the text on page 61, line 3 "TAG-stop" has not been added by way of this amendment. This text was underlined and bolded in the specification as filed and it

should be underlined in the unmarked version of this paragraph):

T4 LECTIN DNA sequence

GAGGATAGACCAGGCTGGCATGGGCTATTGCAGTAGAGGGATCTCGTCTGAATGTTAGATTATAATT
CTCCTGACAACAAACCCACAGGTGCTAACCTTCACTGTTGGATGCCATGGTCAGGAGGCAATCAATT
CTTGAAATATACTTCAAACAAAGAATAAGGTTAATTCTGTGACAGAGTTATGTGCAGAGGTACCTGAG
CAAAAAAATTATGTGGAATGCAAAATTGCCCCAAGATGGGTCCTGTACCAAGCAAACATTATTGGC
ATTTAAAGAAGATGGAACATTTCACCCACACTCAGGACTGTGCTTAGTGCTTATCGGACACCGGA
GGGCGACCTGATGTACAAATGAGAACTTGTGATGCTCTAGATAAAAATCAAATTGGAGTTTGAGAAA
TAG-stop (SEQ ID NO: 102)

Please replace the paragraph beginning at page 61, line 5 with the following:

T4 LECTIN Amino acid sequence

AYGDISERKLLRERLRCFSFDWYLKNVFPNLHVPEDRPGWHGAIRSRGISSELDYNSPDNNPTGANLSL
FGCHGQGGNQFFEYTSNKEIRFNSVTELCAEVPEQKNYVGMQNCPKDFPVPANIIWHFKEDGTIFPHS
GLCL SAYRTPEGRPDVQMRTCDALDKNQIWSFEK* (SEQ ID NO: 103)

Please replace the paragraph beginning at page 61, line 15 with the following (please note that the text on page 61, line 23 "TGA-stop" has not been added by way of this amendment. This text was underlined and bolded in the specification as filed and it should be underlined in the unmarked version of this paragraph):

T5 LECTIN DNA sequence

TTAGATGTTGGCACACCTCACCCAGCAAAGGGAGCTGCGAAAGAAAATGAAAGTGCACAAAGTTCAAATGGT
ACTTGGAGAATGTCTTCCTGACTTAAGGGCTCCATTGTGAGAGCTAGGGTGTGCTTATTAATGTGGC
TTTGGTAAATGCATTCCATTGAAAACACTACAGTCATTCTGGAAGACTGCGATGGGAGCAAAGAGCTT
CAACAATTAAATTACACCTGGTTAAGACTTATTAAATGTGGAGAATGGTGTATAGCCCCATCCCTGATA
AAGGAGCCGTAAGGCTGCACCCTGTGATAACAGAAACAAAGGGCTAAATGGCTGCATAAAATCAACATC
AGTCTTCATCCAGAACTGGTGAATCACATTGTTTTGAAAACAATCAGCAATTATTATGCTTGGAGGA
AATTTTCTCAAAAGATCCTGAAAGTAGCTGCCGTGACCCAGTGAAGCCATATCAAAGTGGAAATTG
AAAAATATTATGAAGC**CTGA**-stop (SEQ ID NO: 104)

Please replace the paragraph beginning at page 61, line 27 with the following:

T5 LECTIN Amino acid sequence

DVGNLQQRELKKLKCKSKWYLENVFPDLRAPIVRASGVLINVALGKCISIENTVILEDCDGSKELQ
QFNYTWLRLIKGEWCIAPIPDKGAVRLHPCDNRNKGLKWLHKSTSVFPELVNHIVFENNQQLLCLEGN
FSQKILKVAACDPVKPYQKWF**EKYEA*** (SEQ ID NO: 105)

Please replace the paragraph beginning at page 61, line 36 with the following (please

note that the text on page 61, line 44 "TAG-stop" has not been added by way of this amendment. This text was underlined and bolded in the specification as filed and it should be underlined in the unmarked version of this paragraph):

T6 LECTIN DNA sequence

TCCTTCGGTGACATT CGGAACGACTGCAGCTGAGGGAAACA ACTGCAC TGTACA AACTTTCTGGTACC
TGCACAATGTCTACCCAGAGATGTTGTCCTGACCTGACGCCACCTTCTATGGTGC CATCAAGAACCT
CGGCACCAACCAATGCCCTGGATGTGGGTGAGAACAAACCGCGGGGGAGCCCCTCATCATGTACTCCTGC
CACGGCCTTGGCGCAACCAGTACTTGAGTACACA ACTCAGAGGGACCTCGCCACAACATCGCAAAGC
AGCTGTGTCTACATGT CAGCAAGGGT GCTCTGGGCTTGGGAGCTGTCACTTCACTGGCAAGAATAGCCA
GGTCCCCAAGGACGAGGAATGGGAATTGGCC CAGGATCAGCTCATCAGGA ACTCAGGATCTGGTACCTGC
CTGACATCCCAGGACAAAAGCCAGCCATGGCCCCCTGCAATCCCAGTGACCCCCATCAGTTGTGGCTCT
TTGTCTAG-stop (SEQ ID NO: 106)

Please replace the paragraph beginning at page 61, line 46 with the following:

T6 LECTIN Amino acid sequence

SFGDISERLQLREQLHCHNF SWYLHNVPEMFV PDLTPTFY GAIKNLGTNQCL DVGENNRGGKPLIMYSC
HGLGGNQYFEYTTQRDLRHNIAKQLCLHVS KGALGLSCHFTGKNS QVPKDEEWELAQDQLIRNSGGSGTC
LTSQDKKPAMAPCNPSDPHQWL FV* (SEQ ID NO: 107)

Please replace the paragraph beginning at page 62, line 10 with the following (please note that the text on page 62, line 18 "TAG-stop" has not been added by way of this amendment. This text was underlined and bolded in the specification as filed and it should be underlined in the unmarked version of this paragraph):

T7 LECTIN DNA sequence

TATGGGGATATCGGAGCTGAAAAAATTCGAGAAGATCACA ACTGCCAAAGTTTAAGTGGTTCATGG
AAGAAATAGCTTATGATATCACCTCACACTACCC TTGCCACCCAAAATGTTGACTGGGAGAAATCAG
AGGCTTCGAAACTGCTTACTGCATTGATAGCATGGAAAAACAAATGGAGGCTTGTGAACTAGGACCC
TGCCACAGGATGGGAGGGATCAGCTTTCAGAATCAATGAAGCAAATCAACTCATGCAGTATGACCA GT
GTTGACA AAGGGAGCTGATGGATCAAAGTTATGATTACACACTGTAATCTAAATGAATTAAAGGAATG
GCAGTACTTCAAGAACCTGCACAGATTACTCATATT CCTCAGGAAAGTGT TAGATCGCTCAGAGGTC
CTGCATCAAGTATTCTCCAATTGTGACTCCAGTAAAAGACTCAAAATGGAAATGAATAACATCC
ATAGTGT TAG-stop (SEQ ID NO: 108)

Please replace the paragraph beginning at page 62, line 20 with the following:

T7 LECTIN Amino acid sequence

YGDISELKKFREDHNCQSFKWFMEIAYDITSHYPLPPKNVDWGEIRGFETAYCIDS MGKTNGGFVELGPCHR
MGGNQLFRINEANQLMQYDQC LTKGADGSKV MITHCNLNEFKEWQYFKNLHRFTHIPS GKCLDRSEVLHQVFI
SNC DSSKTTQKWE MNNIHSV* (SEQ ID NO: 109)

Please replace the paragraph beginning at page 62, line 30 with the following:

T8 LECTIN DNA sequence

GACGTTTCTTCCAGAATGGCACTCCGGGAAAAACTGAAATGAAA ACTTTGACTGGTACCTGAAAAATGTT
ATCCACTCTTGAAGCCACTCCACACCATCGTGGCTATGGAAGAATGAAA ACCTATTGGATGAAAATGTCTG
CTGGATCAGGGACCCGTTCCAGGCAACACCCCATCATGTATTACTGCCATGAATT CAGCTCACAGAATGTC
TACTATCACCTA ACTGGGAGCTATGTGGGACA ACTGATTGCAGAGGCCAGTGCTAGTGATCGCTGCCTGA
CAGACCCCTGGCAAGGGCGAGAACGCCCACCTTAGAACCATGCTCCAAGGCAGCTAAGAATAGACTGCATATATA
TTGGGATTTAAACCGGGAGGAGCTGTCTAAACAGAGATACCAAGCGGTGCTGGAGATGAAGAAGGATCTT
TTGGGTAGCCACGTGCTTGTGCTCCAGACCTGTAGCACGCAAGTGTGGAAATCCAGCACACTGT CAGAGACT
GGGGTCAGACCAACAGCCAGTGA// (SEQ ID NO: 110)

Please replace the paragraph beginning at page 62, line 42 with the following:

T8 LECTIN Amino acid sequence

FGDVSSRMALREKLKCKTFDWYLKNVYPLLKPLHTIVGYGRMKNLLDENVCLDQGPVPGNTPIMYYCHEFSSQ
NVYYHLTGE LYVGQLIAEASASDRCLDPGKA EKPTLEPCSKAAKNRLHIYWDFKPGGAVINRDTKRCLEMKK
DLLGSHVLVLQTCSTQVWEIQHTVRDWGQTNSQ// (SEQ ID NO: 111)

Please replace the paragraph beginning at page 63, line 5 with the following (please note that the text on page 63, line 14 "TGA-stop" has not been added by way of this amendment. This text was underlined and bolded in the specification as filed and it should be underlined in the unmarked version of this paragraph):

T9 LECTIN DNA sequence

TTCGGGGACGTGTCTGAGAGGCTGGCCCTGCGTCAGAGGCTGAAGTGT CGCAGCTCAAGTGGTACCTGG
AGAACGTGTACCCGGAGATGAGGGTCTACAACAA CACCCCTACGTACGGAGAGGTGAGAAACAGCAAAGC
CAGTGCCTACTGTCTGGACCAGGGAGCGGAGGACGGCGACCGGGCGAT CCTCTACCCCTGCCACGGGATG
TCCTCCCAGCTGGTGGTACAGCGCTGACGGCCTGCTGCAGCTGGGCTCTGGGCTCCACAGCCTCT
TGCCTGACTCCAAGTGTCTGGGGATGACGGCACGGGCCGATGCCACCCCTGAAGAGGTGTGAGGATGT
GGCGCGGCCAACACAGCGGCTGTGGACTTCACCCAGAGTGGCCCCATTGTGAGGCCGGCACGGGCCGC
TGCCTGGAGGTGGAGATGTCAAAGATGCCA CTTGGGCTCCGGCTGGTGTACAGAGGTGCTCGGGGC
AGAA GTGGATGATCAGAA ACTGGATCAAACACGCACGGCACTGA-stop (SEQ ID NO: 112)

Please replace the paragraph beginning at page 63, line 16 with the following:

T9 LECTIN Amino acid sequence

FGDVSERLALRQRLKCRSFWKYLENVPEMRVYNNTLYGEVRNSKASAYCLDQGAEDGDRAILYPCHGMSSQ
LVRYSAADGLLQLGPLGSTAFLPDSKCLVDDGTGRMPTLKRCEDVARPTQRLWDFTQSGPIVS RATGRCLEVEM
SKDANFGLRLVQRCGQKWMIRNIKHARH* (SEQ ID NO: 113)

Please replace the paragraph beginning at page 63, line 27 with the following:

T10 LECTIN DNA sequence

GCTGGGGATGTCG CAGTCCAGAAAAAGCTCCGCAGCTCCCTTAAC T GCAAGAGTTCAAGTGGTTATGA
CGAAGATAGCCTGGGACCTGCCAAATTCTACCCACCCGTGGAGCCCCCGGCTGCAGCTGGGGGGAGAT
CCGAAATGTGGGCACAGGGCTGTGTGCAGACACAAGCACGGGGCCTGGGCTCCCCACTAAGGCTAGAG
GGCTGCGTCCGAGGCCGTGGGAGGGCTGCCTGGAACACATGCAGGTATTCACCTCACCTGGAGAGAGG
ACATCCGGCCTGGAGACCCCCAGCACCCAAGAAGTCTGCTTGATGCCATTCCCACACCAGCCCTGT
CACGCTGTACGACTGCCACAGCATGAAGGGCAACCAGCTGTGGAAATACCGCAAAGACAAGACCCGTAC
CACCTGTCAGTGGCAGCTGCATGGACTGCAGTGAAGGTGACCATAGGATCTCATGAACACACCACAGTCTGGAAAAATTCAATAGGAA
CTGA (SEQ ID NO: 114)

Please replace the paragraph beginning at page 63, line 37 with the following:

T10 LECTIN Amino acid sequence

AGDVAVQKKLRSSLNCKSFKWFMTKIAWDLPKFYPPVEPPAAWGEIRNVGTGLCADTKHGALGSPLRLEGCV
RGRGEAAWNMNMQVFIFTWREDIRPGDPQHTKKFCFDAISHTSPVTLYDCHSMKGNLWKYRKDKTLYHPVSGS
CMDCESDHRIFMNTCNPSSLTQQWLFEHTNSTVLEKFNRN* (SEQ ID NO: 115)

Please replace the paragraph beginning at page 63, line 47 with the following:

T11 LECTIN DNA sequence

TGCAATATCAGTGAGCGTGTGGA ACTGAGAAAGAAGTTGGCTGTAAATCATTAAATGGTATTTGGATA
ATGTATAACCCAGAGATGCAGATATCTGGTCCCACGCCAACACCCATTGGTCAATAGAGG
GCCAAAACGACCCAAAGTCCTCAACGTGGAAGGCTATCACCTCCAGACCAACAAATGCCTGGTGGCC
CAGGGCCGCCAAGTCAGAAGGGAGGTCTGTGGCTTAAGGCCTGTGACTACAGTGACCCAAATCAGA
TCTGGATCTATAATGAAGAGCATGAATTGGTTAAATAGTCTCCTTGTCTAGATATGTCAGAGACTCG
CTCATCAGACCCGCCACGGCTCATGAAATGCCACGGGT CAGGAGGATCCCAGCAGTGGACCTTGGAAA
AACAAATCGGCTATACCAGGTGCGGTTGGACAGTGCCTGAGAGCAGTGGATCCCTGGTCAGAAGGGCT
CTGTCGCCATGGCGATCTGCATGGCTCCTCTCACAGCAGTGGCATTGGAAAGGTTAA (SEQ ID
NO: 116)

Please replace the paragraph beginning at page 64, line 9 with the following:

T11 LECTIN Amino acid sequence

NISERVELRKKGCKSFKWKYLDNVYPEMQISGSHAKPQQPIFVNRGPKPKVLQRGRLYHLQTNKCLVAQGRP
SQKGLVVLKACDYSDPNQIWYNEEHELVNLNSLLCLDMSETRSSDPRLMKCHGSGSQQWTFGKNNRLYQV
SVGQCLRADVPLGQKGSVAMAICDGSSSQWHLEG* (SEQ ID NO: 117)

Please replace the paragraph beginning at page 64, line 20 with the following:

T12 LECTIN DNA sequence

TGGGATGTGACAGAGAGGAAGCAGCTCCGGACAAGCTCCAGTGTAAAGACTTCAGTGGTTCTTGGAGA
CTGTGTATCCAGAACACTGCATGTGCCCTGAGGACAGGCCTGGCTTCTCGGGATGCTCCAGAACAAAGGACT
AACAGACTACTGCTTGACTATAACCCTCCCGATGAAAACCAGATTGTGGGACACCAGGTCAATTGTAC
CTCTGTATGGGATGGGCCAGAACATCAGTTTCGAGTACACGTCAGAACAGAAATACGCTATAACACCC
ACCAAGCCTGAGGGCTGCATTGCTGTGGAAGCAGGAATGGATACCCTATCATGCATCTCGGAAGAAC
TGCCCCAGAGAACATCAGAAGTTATCTTGAGGAGGATGGATCTTATTCACGAACAGTCCAAGAACATGT
GTCCAGGCTGCGAGGAAGGAGTCGAGTGACAGTTCGTCCACTCTACGAGACTGCACCAACTCGGATC
ATCAGAAATGGTTCTCAAAGAGCGCATGTTATGA (SEQ ID NO: 118)

Please replace the paragraph beginning at page 64, line 31 with the following:

T12 LECTIN Amino acid sequence

DVTERKQLRDKLQCKDFKWFLTVYPELHVPEDRPGFFGMLQNKGTDYCFDYNPPDENQIVGHQVILYL
CHGMGQNQFFEYTSQKEIRYNTHQPEGCIAVEAGMDTLIMHLCEETAPENQKFILQEDGSLFHEQSKKCV
QAARKESSDSFVPLLKDCTNSDHQKWFKERML* (SEQ ID NO: 119)

Please replace the paragraph beginning at page 64, line 41 with the following:

T13 LECTIN DNA sequence

TCTGAGAACCCAGACTGCATGGAACGCTTGCAGCTGCAAAGGAGACTGGGTTGTCGGACATTCCACTGGT
TTCTGGCTAATGTCTACCCCTGAGCTGTACCCATCTGAACCCAGGCCAGTTCTGGAAAGCTCCACAA
CACTGGACTTGGCTCTGTGCAGACTGCCAGGCAGAACAGGGGACATCCTGGGCTGTCCCAGGGTTGGCT
CCTTGCAGTGACAGCCGGCAGAACAGTACCTGCAGCACACCAGCAGGAAGGAGATTCACTTGGCAGCC
CACAGCACCTGTGCTTGCTGTCAGGCAGGAGCAGGTGATTCTCAGAACTGCACGGAGGAAGGCCCTGGC
CATCCACCAGCAGCACTGGACTTCCAGGAGAATGGATGATTGTCCACATTCTTCTGGGAAATGCATG
GAAGCTGTGGTGCAAGAAAACAATAAAGATTGTACCTGCGTCCGTGATGGAAAAGCCGCCAGCAGT
GGCGTTTGACCAGATCAATGCTGTGGATGAACGATGA (SEQ ID NO: 120)

Please replace the paragraph beginning at page 65, line 4 with the following:

T13 LECTIN Amino acid sequence

EKPDCMERLQLQRRILCRTFHWFLANVYPELYPSEPRPSFSGKLHNTGLLCADCQAEGDILGCPMVLAP
CSDSRQQYQLQHTSRKEIFGSPQHLCFAVRQEQLVQNCTEEGLAIHQHQHWDQENGIVHILSGKCME
AVVQENNNDLYLRPCDGKARQQWRFQINAVDER* (SEQ ID NO: 121)

Please replace the paragraph beginning at page 65, line 14 with the following:

T14 LECTIN DNA sequence

TATGGAGATGTGTCAGTCAGAAAAACACTAAGAGAAAATCTGAAGTGTAAAGCCCTTTCTGGTACCTAG
AAAACATCTATCCGGACTCCCAGATCCCAAGACGTTATTACTCACTTGAGATAAGAAATGTTGAAAC
CAATCAGTGTAGACAACATGGGCCGCAAGGAAAATGAAAAAGTGGTATATTCAACTGTCATGGTATG
GGAGGAAATCAGGTATTTCTACACTGCTGACAAAGAAATCCGAACCGATGACTTGTGCTGGATGTT
CTAGACTCAATGGACCTGTAATCATGTTAAAGGCCACCATATGAGAGGAAATCAGTTATGGAATATGA
TGCTGAGAGACTCACGTTGCGACATGTTAACAGTAACCAATGTCTCGATGAACCTCTGAAGAACAGACAAA
ATGGTGCCTACAATGCAGGACTGTAGTGGAAAGCAGATCCAACAGTGGCTGCTAAGGAACATGACCTTGG
GCACATGA (SEQ ID NO: 122)

Please replace the paragraph beginning at page 65, line 24 with the following:

T14 LECTIN Amino acid sequence

YGDVSVRKTLRENLKCKPFSWYLENIYPDSQIPRYYSLGEIRNVETNQCLDNMGRKENEKVGIFNCHGMGGN
QVF SYTADKEIRTDDLCLDVSRLLNGPVIMLKCHHMGRNQLWEYDAERLTLRHVNNSNQCLDEPSEEDKMVPTMQ
DCSGRSRSQQWLLRNMTLGT* (SEQ ID NO: 123)

Please replace the paragraph beginning at page 65, line 34 with the following:

T15 LECTIN DNA sequence

TCGGGAATGTTGAGAGCAGATTGGACCTGAGGAAGAATCTGCGCTGCCAGAGCTCAAGTGGTACCTGGA
GAATATCTACCCCTGAACTCAGCATCCCCAAGGAGTCCTCCATCCAGAAGGGCAATATCCGACAGAGACAG
AAGTGCCTGGAATCTCAAAGGCAGAACACCAAGAAACCCAAACCTAAAGTTGAGCCCTGTGCCAAGG
TCAAAGGCGAAGATGCAAAGTCCCAGGTATGGGCCTTCACATACACCCAGAAGATCCTCCAGGAGGAGCT
GTGCCTGTCAGTCATCACCTGTTCCCTGGCGCCCCAGTGGTTCTTGTCCCTTGCAAGAATGGAGATGAC
CGACAGCAATGGACCAAAACTGGTTCCCACATCGAGCACATAGCATCCCACCTCTGCCCTGATACAGATA
TGTTCGGTGATGGCACCGAGAACGGCAAGGAAATGGCGTCAACCCATGTGAGTCCTCACTCATGAGCCA
GCACTGGGACATGGTGAGTTCTTGAG (SEQ ID NO: 124)

Please replace the paragraph beginning at page 65, line 45 with the following:

T15 LECTIN Amino acid sequence

FGNVESRLDLRKNLRCQSFKWYLENIYPELSIPKESSIQKGNIRQRQKLESQRQNNQETPNLKLSPCA
VKGEDAKSQVWAFTYTQKILQEELCLSVITLFPGAPVVLVLCKNGDDRQQWTKTGSHIEHIASHLCLTD
MFGDGTENGKEIGVNPCESSLMSQHDMVSS* (SEQ ID NO: 125)

Please replace the paragraph beginning at page 66, line 6 with the following:

T16 LECTIN DNA sequence

AGTGTGGCTACGCGGATAGAGCAGAGGAAGAAGATGAACTGCAAGTCCTCCGCTGGTACCTGGAGAACGTCT
ACCCAGAGCTCACGGTCCCCGTGAAGGAAGCACTCCCCGGCATCATTAAGCAGGGGGTGAAGTGCTAGAATC
TCAGGGCCAGAACACAGCTGGTACTTCCTGCTTGAATGGGGATCTGCAGAGGGTCTGCCAAGAACCCGCAG
CCCGCCCAGGCATGGCTGTTCACTGACCACCTCATCCAGCAGCAGGGAAAGTGCCTGGCTGCCACCTCCACCT
TAATGTCCCTCCCCTGGATCCCCAGTCATACTGCAGATGTGCAACCTAGAGAAGGCAAGCAGAAATGGAGGAG
AAAAGGATCTTCATCCAGCATTCACTCAGTCACTGAGTGGCCTCTGCCTGGAGACAAAGCCTGCCAGCTGGTGA
AAGTGTCAAGGCTGACGCCAGGCCAGCAGTGGCAGCTGTTGCCACACATGA (SEQ ID NO: 126)

Please replace the paragraph beginning at page 66, line 6 with the following:

T16 LECTIN Amino acid sequence

SVATRIEQRKKMNCKSFRWYLENVPELTVPVKEALPGI IKQGVNCLESQGQNTAGDFLLGMGICRGSAKNP
QPAQAWLFSNDHLIQQQGKCLAASTLMSSPGSPVILQMCNPREGKQKWRRKGSFIQHSVSGLCLETKPAQLV
TSKCQADAQAQQWQLLPHT* (SEQ ID NO: 127)

After page 95 and before the claims, please insert a paper copy of the Sequence Listing.